T-475 SERIES

ultraVac

A DIVISION OF Hi-Vac® CORPORATION

Ultra-Vac® SERIAL NUMBER : UV-XXXX

OPERATION
SERVICE
& PARTS
MANUAL

A Product of Hi-Vac Corporation • 117 Industry Road • Marietta, Ohio 45750 USA

Corporate: Tel: 740.374.2306 • Toll Free USA: 800.752.2400 • Fax: 740.374.5447 • Web: www.hi-vac.com • E-mail: sales@hi-vac.com

Aquatech Direct: Tel: 740.374.9171 • Toll Free USA: 800.800.1016 • Fax: 740.374.5447 • Web: www.aquatechinc.com • E-mail: sales@hi-vac.com

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INSPECTION PROCEDURES

All pieces received should be inspected for damage immediately upon receipt.

1. Damage can be most easily detected by looking for scrapes on the paint.

2. Inspect all sheet metal and structural steel for damage such as bends, kinks or breaks.

3. Check all wiring for abrasions, cuts, cracks, etc. If any are found, repair or replace before connecting to power source.

4. Check all conduit runs and fittings for defects.

5. Check motor and vacuum pump for free rotation before starting under power for the first time after installation.

6. Compare the packing list attached to each piece of each shipment.

7. Verify the number of pieces and description of each piece shown on the packing slip.

REPORT ANY DAMAGE, NO MATTER HOW SLIGHT, IMMEDIATELY TO:

Hi-Vac® Corporation
117 Industry Road
Marietta, OH 45750
Attention: Service Department
Phone: 740.374.2306
Toll Free: 800.752.2400
Fax: 740.374.5447

WARRANTY

Hi-Vac® CORPORATION WARRANTS TO THE ORIGINAL PURCHASER OF THE **Ultra-Vac®** UNIT QUOTED HEREIN THAT THE **Ultra-Vac®** UNIT SHALL BE FREE FROM DEFECTS IN MATERIAL AND WORKMANSHIP UNDER NORMAL USE AND SERVICE. **Hi-Vac®** CORPORATION DOES NOT WARRANT COMMERCIAL ITEMS MANUFACTURED BY OTHERS SUCH AS DIESEL ENGINES, TRUCK CHASSIS, TIRES OR MOTORS. **Hi-Vac®** CORPORATION'S OBLIGATION UNDER THIS WARRANTY SHALL BE LIMITED TO THE REPAIR OR EXCHANGE OF ANY PART OR PARTS WHICH MAY PROVE DEFECTIVE UNDER NORMAL USE AND SERVICE WITHIN THE SHORTER PERIOD OF **TWO (2) YEARS OR FOUR THOUSAND (4,000) WORK HOURS** FROM THE DATE OF DELIVERY TO THE ORIGINAL PURCHASER AND WHICH **Hi-Vac®** CORPORATION'S EXAMINATION SHALL DISCLOSE TO ITS SATISFACTION TO BE DEFECTIVE. THIS WARRANTY REQUIRES PURCHASER TO OPERATE THE **Ultra-Vac®** UNIT IN STRICT COMPLIANCE WITH THE PRINTED INSTRUCTIONS AND TO SERVICE THE **Ultra-Vac®** UNIT ACCORDING TO THE METHODS AND SCHEDULES CONTAINED IN THE **Ultra-Vac®** UNIT'S MANUAL. EVIDENCE OF PURCHASER'S SCHEDULED MAINTENANCE MUST BE REPORTED IN WRITING TO **Hi-Vac®** CORPORATION ON THE FORMS SUPPLIED TO PURCHASER IN THE **Ultra-Vac®** MAINTENANCE MANUAL. SHOULD PURCHASER BELIEVE A DEFECT HAS BEEN DISCOVERED, THE PURCHASER SHALL RETURN THE ALLEGED DEFECTIVE PART TO **Hi-Vac®** CORPORATION FOR EXAMINATION, F.O.B THE **Hi-Vac®** PLANT, **MARIETTA, OHIO**. IN THE EVENT PURCHASER DOES NOT SERVICE AND MAINTAIN THE **Ultra-Vac®** UNIT ACCORDING TO THE **Ultra-Vac®** MAINTENANCE MANUAL, THE WARRANTY IS TO BE CONSIDERED NULL AND VOID AND **Hi-Vac®** CORPORATION'S OBLIGATION HEREUNDER SHALL BE DEEMED FULFILLED.

THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES EXPRESSED OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR USE AND OTHER OBLIGATIONS OR LIABILITIES ON THE PART OF Hi-Vac® CORPORATION.

LIMITS OF LIABILITY

Hi-Vac® CORPORATION SHALL NOT BE LIABLE FOR AND PURCHASER ASSUMES RESPONSIBILITY FOR ALL PERSONAL INJURY AND PROPERTY DAMAGE RESULTING FROM THE HANDLING, POSSESSION OR USE OF YOUR **Ultra-Vac® INDUSTRIAL VACUUM LOADER** BY THE PURCHASER. THE LIABILITY OF **Hi-Vac®** CORPORATION ARISING OUT OF THE SUPPLYING OF YOUR **Ultra-Vac® INDUSTRIAL VACUUM LOADER**, OR ITS USE WHETHER ON WARRANTIES OR CLAIM OF NEGLIGENCE OR OTHERWISE, SHALL NOT IN ANY CASE EXCEED THE COST OF CORRECTING DEFECTS IN YOUR **Ultra-Vac® INDUSTRIAL VACUUM LOADER** AS HEREIN PROVIDED. **Hi-Vac®** CORPORATION SHALL NOT IN ANY EVENT BE LIABLE FOR ANY LABOR EXPENDED BY THE PURCHASER ON ANY PART OR PARTS OR FOR ANY SPECIAL DIRECT OR INDIRECT OR CONSEQUENTIAL DAMAGES. NO MATERIAL MAY BE RETURNED WITHOUT FIRST GETTING APPROVAL FROM **Hi-Vac®** CORPORATION. ANY GOODS RETURNED WITH SUCH APPROVAL MUST BE SENT BACK WITH ALL TRANSPORTATION CHARGES PREPAID WITHIN 30 DAYS AFTER ISSUANCE OF APPROVAL. GOODS RETURNED AND ACCEPTED IN ACCORDANCE E PRICES PAID AT TIME OF SHIPMENT.

MESSAGE TO NEW OWNER

Congratulations on your purchase of a new **Ultra-Vac®** Vacuum Loader. This manual is supplied for your convenience to assist you in adequately maintaining, servicing and operating your **Ultra-Vac®** Vacuum Loader.

Your **Ultra-Vac®** Vacuum Loader has been designed to give you many years of dependable, trouble free service, which can be attained only through conscientious care by your personnel. Therefore, cooperation, practice and skill on the part of all personnel associated with your **Ultra-Vac®** is necessary to maintain maximum productivity.

The material in this manual has been carefully and thoughtfully prepared to provide a simple and understandable guide. It should be carefully read and thoroughly understood by all personnel responsible for your **Ultra-Vac®** before engaging in both operation and the maintenance of the system.

The very best wishes from our entire organization are extended to you with the assurance that you will enjoy long and dependable service from this **Ultra-Vac®**.

SAFETY PRECAUTIONS

CAUTION!

SOME DO'S AND DON'TS BEFORE GETTING STARTED WITH YOUR NEW **Ultra-Vac®** SYSTEM.

The safety of the operator is of great importance to us at **Hi-Vac®** Corporation. The decals, shields, guards and other protective features that are designed into the machine are there for your protection. A high percentage of the accidents that occur are due to careless behavior or misuse of machinery. We ask you to be a careful operator and to properly service your machine.

PROCEED WITH CAUTION!

Before attempting to operate the machine, read carefully and understand all instructions contained in the manual.

IT IS VERY IMPORTANT THAT YOU UNDERSTAND THE FOLLOWING SAFETY WARNINGS IN FULL. INJURY OR DEATH TO PERSONNEL, AND/OR DAMAGE TO MACHINE CAN RESULT.

* Unit should **ONLY** be operated by thoroughly trained personnel
* **Do not** put your face or any portion of head in front of the nozzle.
* Hearing protection **MUST** be worn by operator and those working near the vacuum loader.
* **Do not** operate machinery without proper guards in place. Keep away from moving objects
* **Do not** put your hand in front of the intake nozzle while in operation.
* **Do not** put your face or any portion of head in front of the nozzle.
* **Do not** vacuum any flammable liquid.
* Check that unit is properly stopped so unit will not tip or roll.
* **Do not** lubricate, adjust or repair the **Ultra-Vac®** unit unless engine is shut down.
* **NEVER** raise body unless the tailgate is fully open.
* **NEVER** operate tailgate while body is in elevated position.
* **NEVER** move the **Ultra-Vac®** with the body in the raised position.
* Clear the area behind the **Ultra-Vac®** of all personnel before opening or closing the tailgate.
* **NEVER** inspect or work under the raised body without the safety body prop in place.
* **NEVER** inspect or work under the open tailgate without a tailgate prop in place.
* **Do not** operate the **Ultra-Vac®** unit while wearing loose clothing, watches or rings.
* Periodically check for any loose bolts or set screws.

NOTE: **AS WITH ANY TYPE OF HEAVY DUTY EQUIPMENT, CAUTION MUST BE EXERCISED IN ITS PROPER USE.**

WARNING: **FAILURE TO COMPLY WITH ANY OF THE ABOVE SAFETY NSTRUCTIONS OR THOSE THAT FOLLOW WITHIN THIS MANUAL MAY RESULT IN SEVERE INJURY OR DEATH!**

PLEASE REMEMBER: **SAFE OPERATION BEGINS WITH A SAFE OPERATOR. WE ASK YOU TO BE THAT TYPE OF OPERATOR.**

OPERATIONS

PRESTART PROCEDURES

Caution: Before prestarting your **Ultra-vac®** unit, be sure you have read and understood all of the safety warnings and precautions located in the "**Safety Precaution**" section of this manual!

1. Stop unit and be sure to set parking brake.

2. Visually inspect the unit so that there are no obstuctions which may cause harm to machine or operating personnel.

3. Check oil level in Vacuum Pump and Engine.

4. Check coolant level in Engine.

5. Check Hydraulic oil level and add if necessary.

6. Check all Hydraulic hoses and fittings for leaks. Repair if necessary.

7. Check belts for proper tension. (Refer to belt tensioning in this manual)

8. Check that all doors are closed and locked and wet baghouse ball valves are closed.

9. Attach vacuum loading hose.

10. You are now ready to start your **Ultra-Vac®** unit.

START-UP PROCEDURES

Before starting up your **Ultra-Vac®** unit, Be sure you have done all the "**Prestart Procedures**" located on the previous page.

1. At the control panel, turn key to start engine.

2. With engine running, select which vacuum plenum to use. (i.e.. wet, dry left, dry right, or dry left and right).

3. Press the "Fault Reset" button to clear "Hopper Full" condition alarm.

Note: This unit has been supplied with the new Drexelbrook "The Point Series" Level Probe. During initial start-up and after a loss of power, the operator must wait approx. 20 seconds to allow the probe to finish its calibration cycle. The blower will not start and the "Hopper Full" light will remain on until the cycle is complete and the blower "Fault Reset" button is pushed.

4. Allow Engine to idle until air pressure is built up before engaging Vacuum Pump.

WARNING: The Vacuum System will not begin operation until air pressure is at least 60 psi.

5. At engine idle speed, Push and hold the "Blower Engage" button for 5 seconds to fully engage the PTO. This will allow the Vacuum Pump to start. Be sure to engage and disengage the blower at idle speed only.

WARNING: Never engage Blower above 1,000 RPM's.

6. After Vacuum Pump is engaged, press up on the throttle control until you are at operating speed (2200 RPM's).

7. Once the unit is at operating speed, you may begin loading material. Periodically check gauges to ensure the unit is running properly.

8. The **Ultra-Vac®** unit and engine have built-in shutdowns. If a shutdown occurs, immediately stop work and remedy the situation.

MANUAL SHUTDOWN PROCEDURES

Before stopping unit, allow the **Ultra-Vac®** to run for a moment to let the lines clean out.

1. Press down on the throttle control until you are at engine idle RPM's.

WARNING: Never disengage Blower above 1,000 RPM's.

2. If time allows, let Vacuum Pump run at low RPM to cool down.

3. Press the "Blower Disengage" button to stop Vacuum Pump.

4. Turn key to stop engine.

AUTOMATIC SHUTDOWNS (MACHINE)

The following conditions will cause the blower to be automatically disengaged.

1. HOPPER FULL

This is caused by material filling up inside the collector body and activating the Level Probe. This is indicated by a light on the control panel. Simply dump material out of the collector body and press the "Fault Reset" button. You may then continue loading.

2. LOW AIR PRESSURE

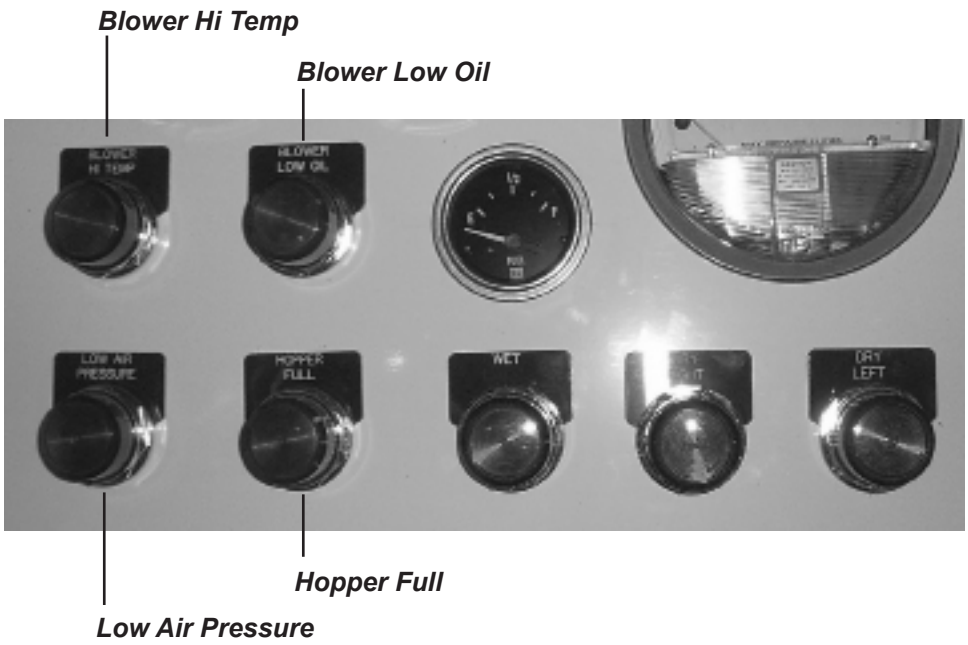
If the Unit air pressure drops below 60 PSI, the blower will disengage and the "Low Air Pressure" light will turn on. Check all air lines for leaks and correct if necessary. When air pressure builds back up to above 60 PSI, push the "Fault Reset" button and restart the blower.

3. LOW OIL LEVEL IN THE GEAR CASE(S) OF THE VACUUM PUMP

There are low oil level float switches installed near the vacuum pump. Daily checks of the oil level, by visually inspecting the oil level sight glasses on the vacuum pump, will prevent a low oil condition. Do not use level switches to check oil level. In the event a loss of oil occurs during operation, the unit will shut down and the "BLOWER LOW OIL" indicator will light on the control panel. This condition is to be reset after the problem is corrected by pressing the "Fault Reset" button.

4. **HIGH BLOWER TEMPERATURE**

There is a high temperature sensing thermal switch and gauge located near the control panel. The thermal switch sensor is located in the discharge pipe of the vacuum pump. When the discharge air temperature reaches 350° F, the unit will shut down and the "BLOWER HIGH TEMP" indicator will light on the control panel. This condition is to be reset after the problem is corrected by pressing the "Fault Reset" button.



AUTOMATIC SHUTDOWNS (ENGINE)

The following conditions will shut off the engine fuel solenoid causing the engine to shutdown.

1. Engine Oil Pressure

When the oil pressure in the engine drops below a desired set point, the engine will automatically shutdown. This is designed in the switch and should not be tampered with. Changing the set points may cause damage to engine. Check engine immediately after the shutdown and correct problem.

2. Engine Temperature

When the engine coolant temperature rises above a desired set point, the engine will automatically shutdown. Check engine immediately after the shutdown and correct problem.

DUMPING PROCEDURES

Before dumping material out of the collector body, be sure that there are no personnel or obstuctions near the Ultra-Vac®. This could result in damage to machinery or injury to personnel.

Dumping Dry Compartments:

1. At engine idle, turn Hydraulic Pump switch to “ON”. Only engage Hydraulic pump at Idle speed.

2. Pull the Gresen valve marked “Lock/Unlock” to unlock tailgate prior to raising. Be sure that there are no personnel at the back of the **Ultra-Vac®** unit.

3. Pull the Gresen valve marked “Tailgate Open/Close” to open the tailgate. Be sure that there are no personnel at the back of the **Ultra-Vac®** unit.

WARNING: Never open the tailgate without first unlocking. This will cause damage to the equipment.

4. Pull the Gresen valve marked “Raise/Lower” to fully raise the collector body.

WARNING: Be sure that the Ultra-Vac® is on a level surface before raising the collector body. Possible tipping may occur.

Gresen Valve

5. Push and hold the “Vibrator” button for approximately 3-5 seconds to loosen any stuck material. Repeat as required to fully empty the collector body.

6. After inspecting the Blower Inlet Screen, Lower the collector body, close the tailgate, and then lock the tailgate locks.

WARNING: Never work under body or tailgate in the raised position unless the appropriate props are in place. Never move the Ultra-Vac® with the collector body in the raised position.

Inlet Screen

DUMPING PROCEDURES (cont.)

Dumping Wet Compartments:

1. With the collector body lowered, open the ball valves under the front of the collector body, on both sides, and drain the wet bag houses.

NOTE: **Wet bag houses should be drained after each use.**

2. The collector body must then be dumped as described in steps 1-6 on the previous page.

NOTE: **The collector body may also be emptied through the optional tailgate drain valve.**

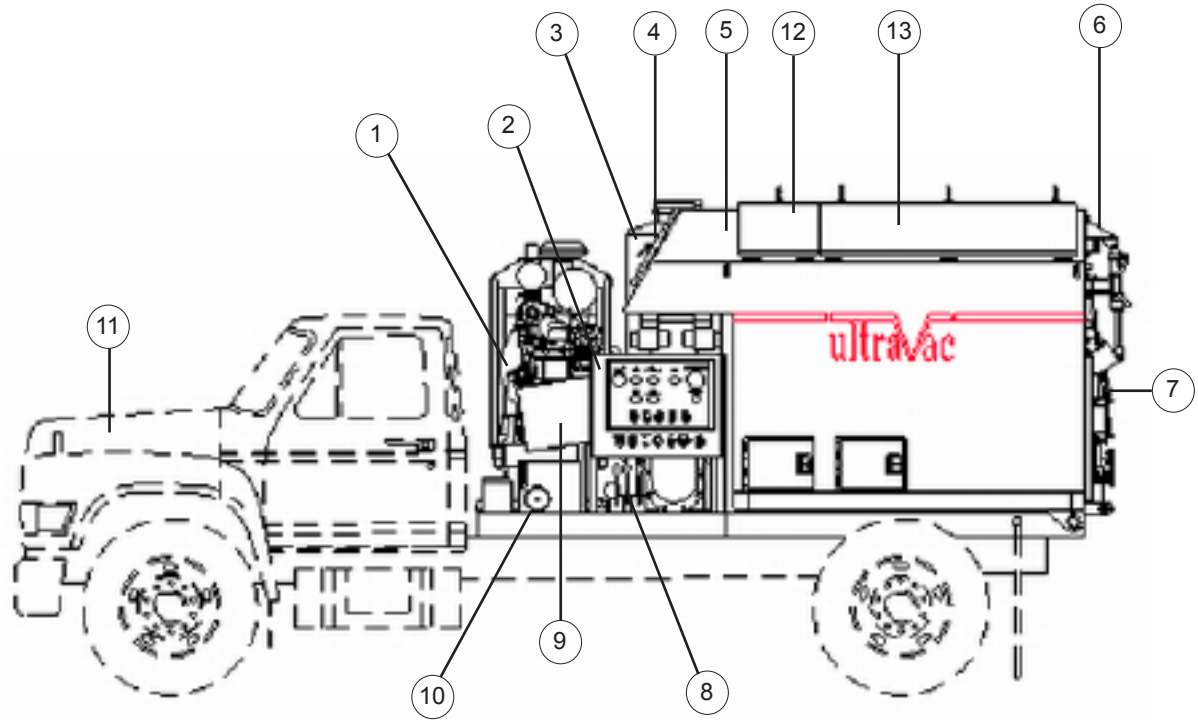
3. After material is unloaded, collector body lowered, tailgate shut, and tailgate locked, you may then turn hydraulic pump to “OFF”.

Ball Valve

Optional Tailgate Drain Valve

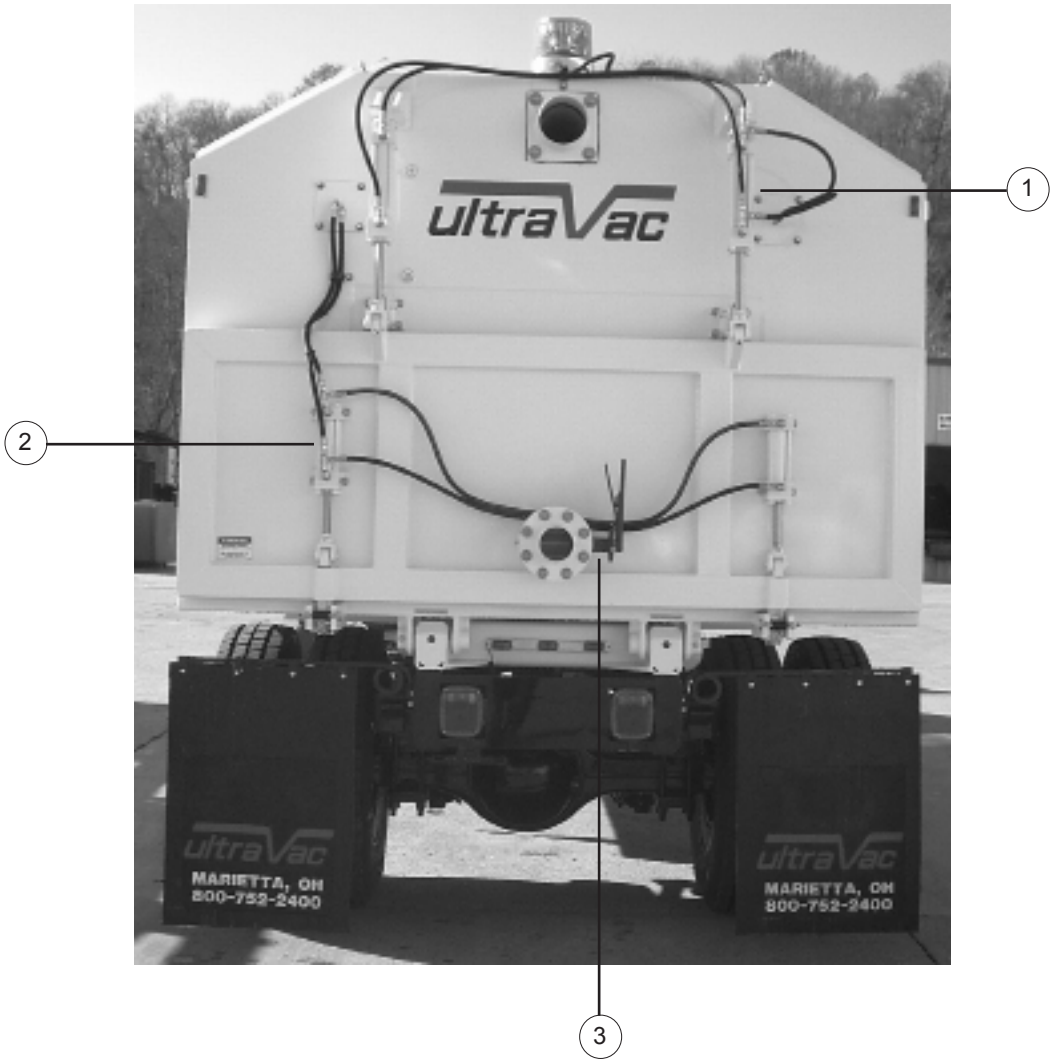
MACHINE SPECIFICATIONS

BODY



ITEM	PART #	DESCRIPTION	QTY
1	U3201-0104	ENGINE,JD4045,TIER 3,SP111P301 PTO,T475	1
2	U4102-0621	PANEL,T475,12VDC W/INVERTER FOR DREXELBROOK	1
3	U4201-0110	SILENCER,8”IN&OUT,VERTICAL,S716	1
4	U1007-3669	ACCESS DOOR,NOSE,8x12,T475	2
5	U1007-3674	BOX ASSEMBLY,T475,W/HEPA FILTER IN NOSE	1
6	U1007-3162	INLET PIPE WELDMENT,T475,6”SCH.40	1
7	U1007-3372	TAILGATE,T475,95 3/4 WIDE BOX	1
8	U3904-0102	VALVE,HYD,4-WAY,3-SPOOL W/PRESSURE REL	1
9	U1012-0100	BELT GUARD,T475,JD4045,R715 RCSJ	1
10	U3907-0025	TANK,HYDRAULIC,10 GAL,HORIZONTAL NON-JIC	1
11	U5502-0103	CHASSIS,INTL,4300 SBA 4X2, T475	1
12	U1007-1856	DOOR,WET PLENUM,4 CUYD. BOX	2
13	U1007-2009	DOOR,DRY PLENUM,4 CUYD. BOX	2

ASSEMBLY,REAR BODY,T475,95 3/4 WIDE BOX
PART #U1007-3376



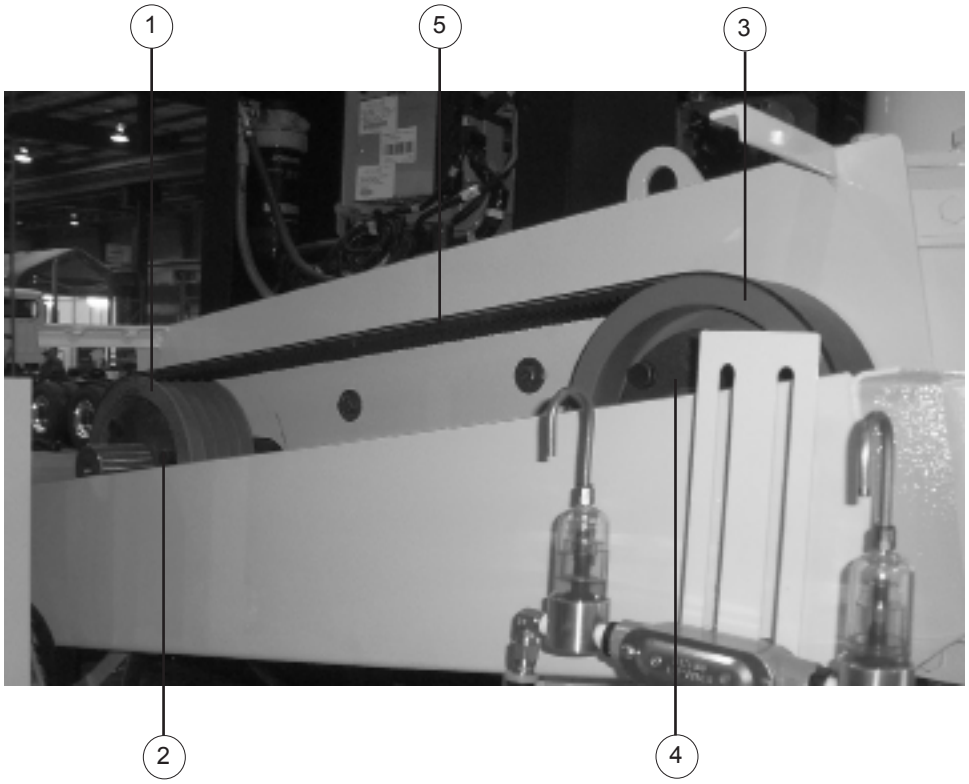
ITEM	PART #	DESCRIPTION	QTY
1	U3903-0035	CYLINDER,HYDR,DBL ACT,2”BORE,8”STROKE	2
2	U3903-0026	CYLINDER,HYDR,DBL ACT,2”BORE X 5”STROKE	2
3	U4307-0008	VALVE,BUTTERFLY,6”,HAND LEVER ACTUATOR	1

ENGINE and PTO
PART # U3201-0104

****SEE JOHN DEERE ENGINE & TWIN DISC PTO MANUALS FOR DETAILS**

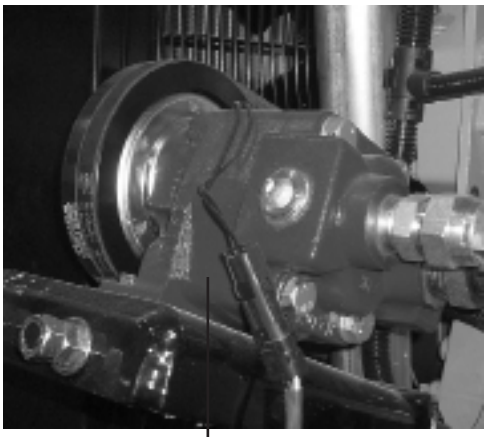
BATTERY,12VDC,800CCA,350A RES. TOP POST
PART #U3312-0006

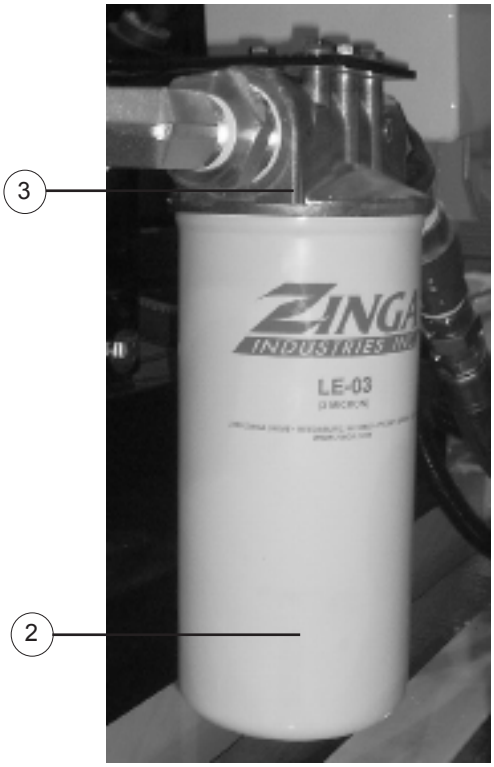
SHEAVES, BUSHINGS, and BELT

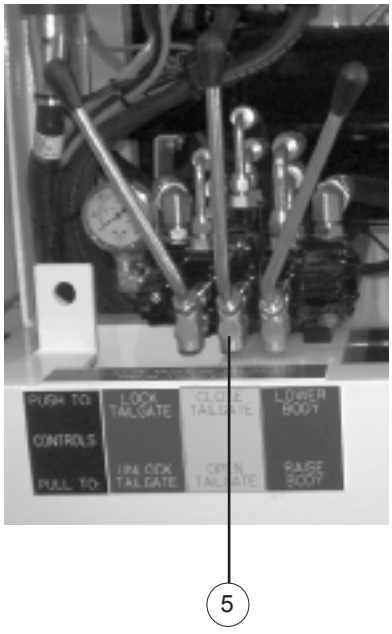


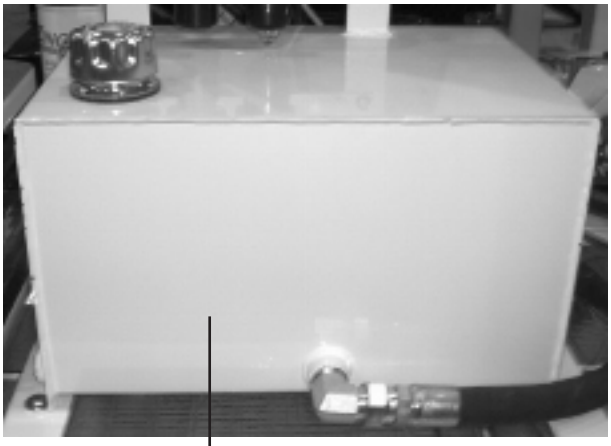
ITEM	PART #	DESCRIPTION	QTY
1	06-0408	SHEAVE,5V9.0 X 5-E	1
2	U3403-0025	BUSHING,E X 2.25B X .63 SQ KEY (SPECIAL)	1
3	06-0163	SHEAVE,5V8.5 X 5-E	1
4	06-0136	BUSHING,E X 2.375	1
5	U3404-0139	BELT,5R5VX850	1

HYDRAULIC SYSTEM

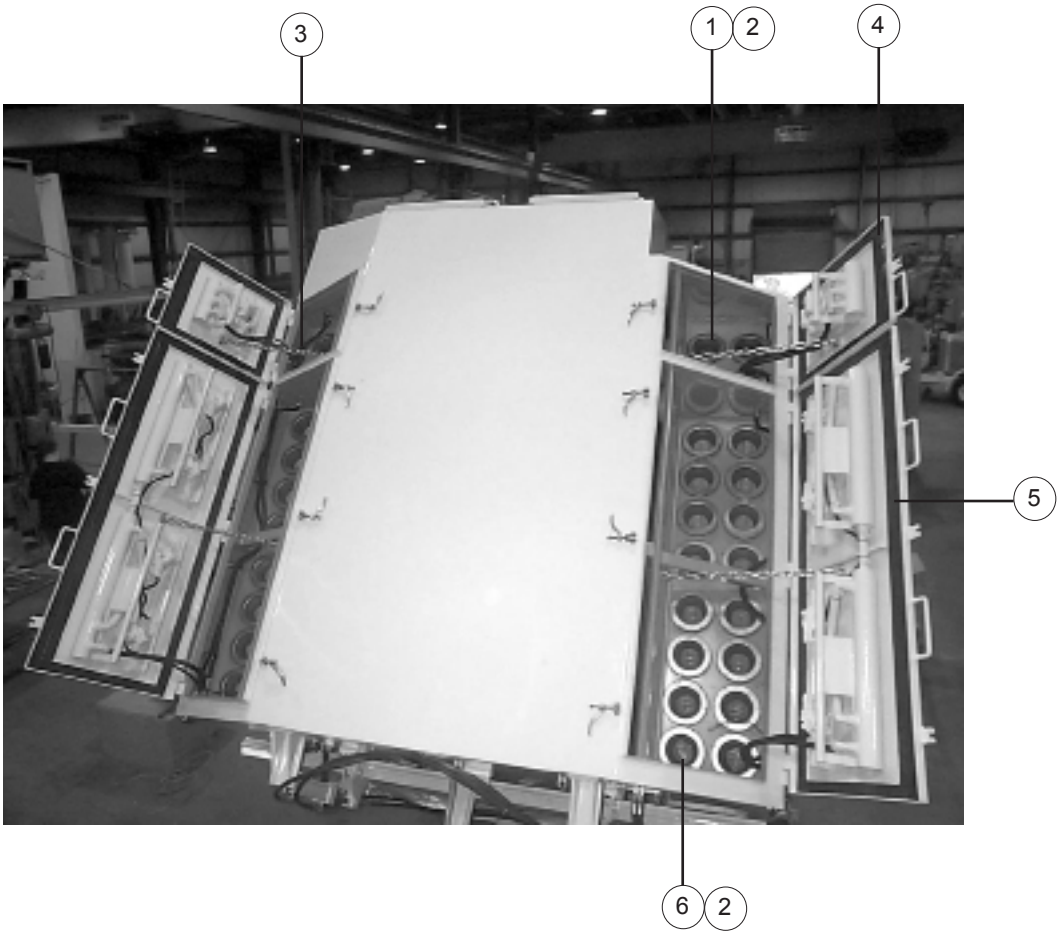




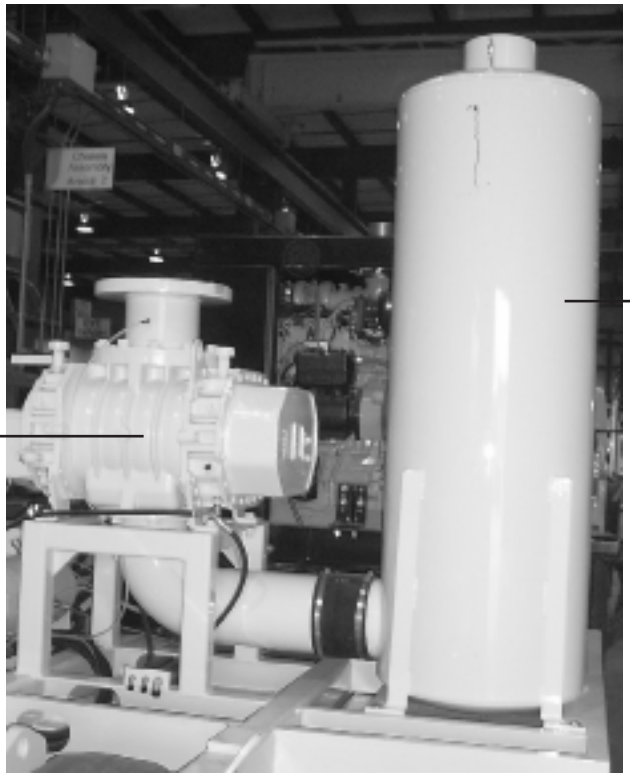


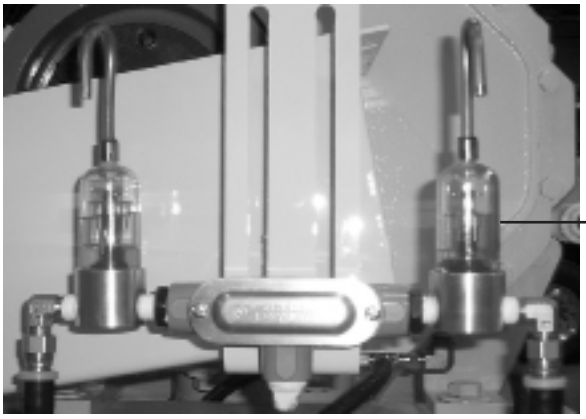


ITEM	PART #	DESCRIPTION	QTY
1	U3902-0069	PUMP,HYD,CLUTCH,1.55 CU.IN.DISP,5.4GPM	1
2	U3914-0017	FILTER,HYDRAULIC,CARTRIDGE	1
3	U3914-0021	FILTER HEAD,HYD.SUCTION	1
4	U3907-0025	TANK,HYDRAULIC,10 GAL,HORIZONTAL NON-JIC	1
5	U3904-0102	VALVE,HYD,4-WAY,3-SPOOL W/PRESSURE REL	1

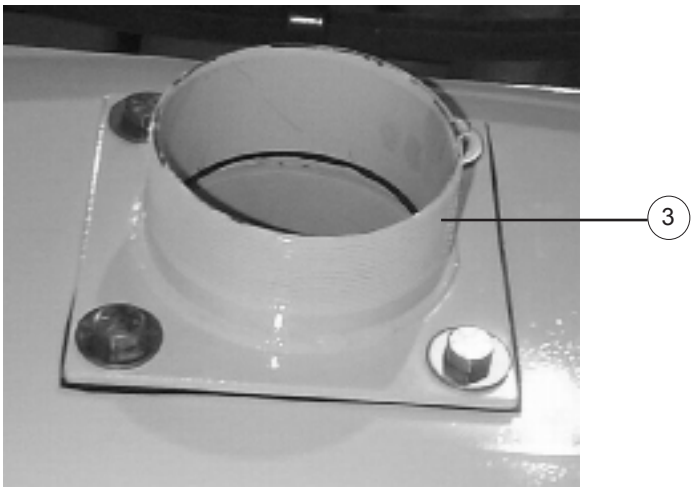


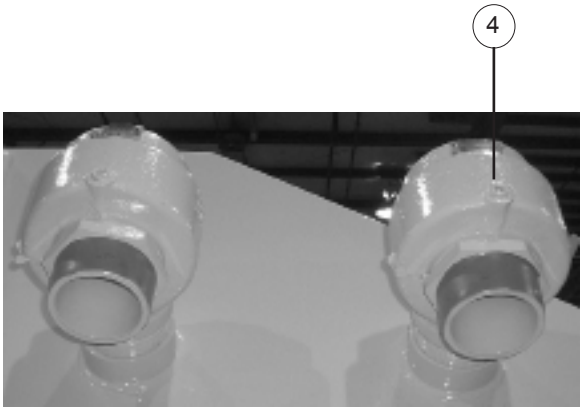
ITEM	PART #	DESCRIPTION	QTY
1	U3701-0052	FILTER BAG,WET,4 CU YD BOX	8
2	U3702-0024	CAGE,BAG,ALL 2 3/4”VENTURI W/4” RING SPACING	40
3	U4623-0005	CHAIN,PSSG LINK #4/0 ZINC PLATED	12FT
4	U3802-0015	GASKET,WET PLENUM DOOR,SE-475	2
5	U3802-0032	GASKET,DRY PLENUM,SE-475	2
6	U3701-0053	FILTER BAG,DRY,6”OD X 44” LONG	32

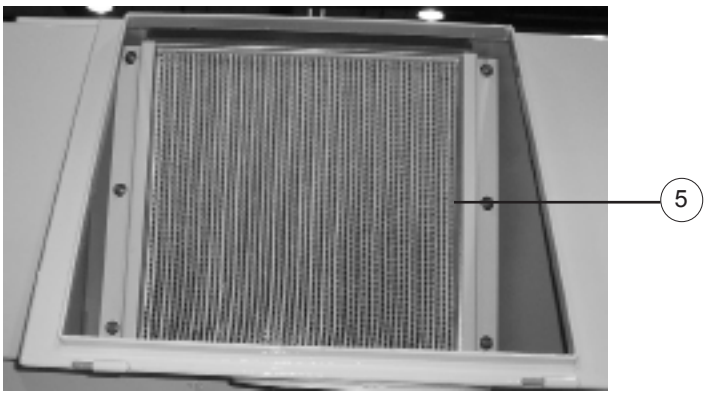




ITEM	PART #	DESCRIPTION	QTY
1	03-0399	BLOWER,ROOTS,715RCSJ,LH,CCW,BOTTOM DISCH	1
2	U4201-0110	SILENCER,8”IN&OUT,VERTICAL,S716	1
3	27-0012	SWITCH,OIL LEVEL,SPST N/O	2

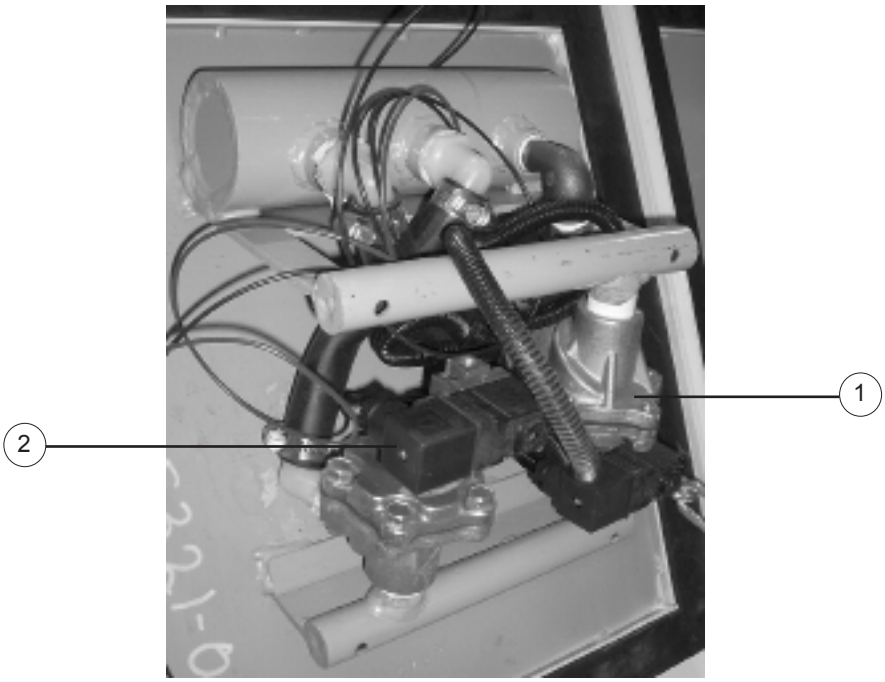




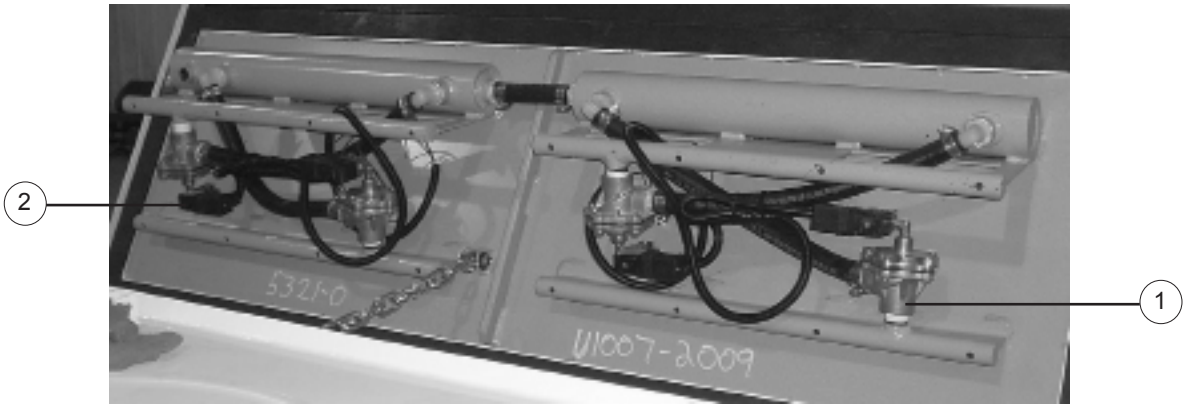


ITEM	PART #	DESCRIPTION	QTY
1	U1007-1810	COLLECTOR HEAD,6” INLET	1
2	27-0181	DREXELBROOK POINT-LINE LEVEL PROBE SYSTEM	1
3	U1007-3162	INLET PIPE WELDMENT,T475,6”SCH.40	1
4	16-0267	VALVE,VACUUM RELIEF,3”,(15”HG)	2
5	20-0150	HEPA FILTER,24X24X11-1/2,HI-TEMP GASKET	1

PNEUMATIC SYSTEM



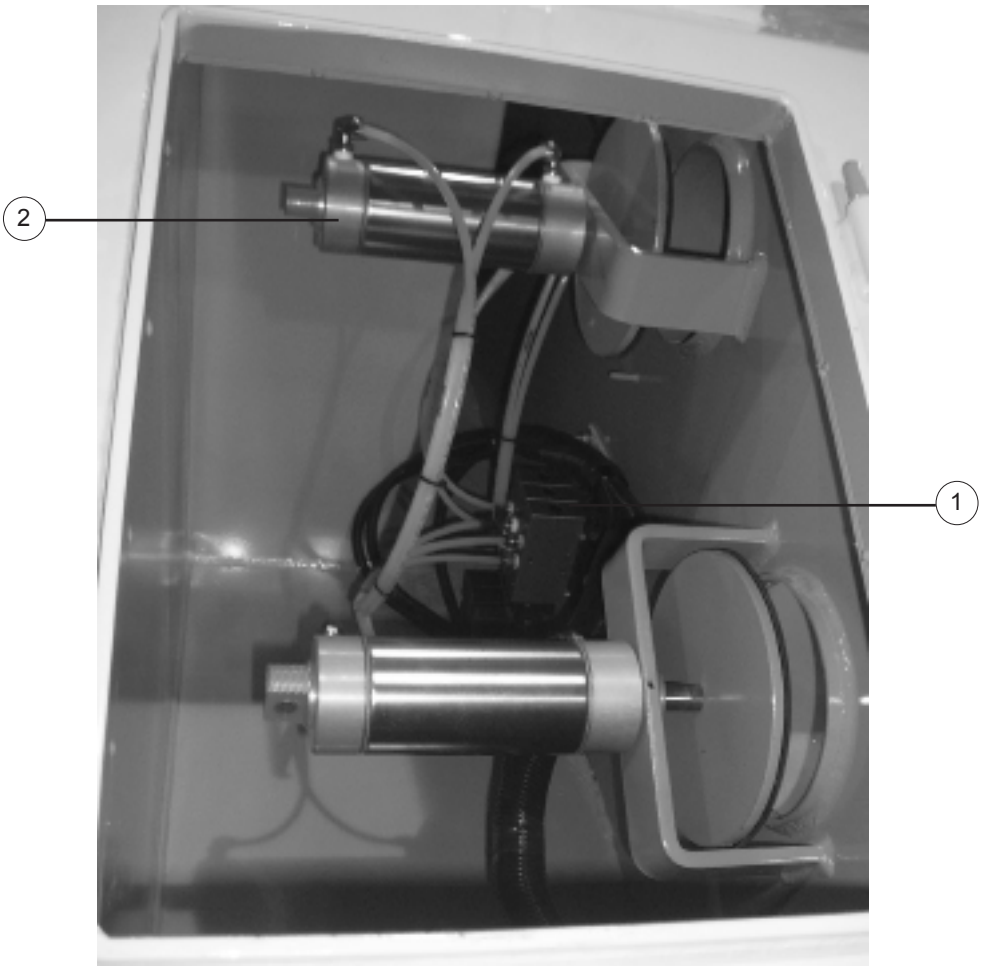
Wet Side



Dry Side

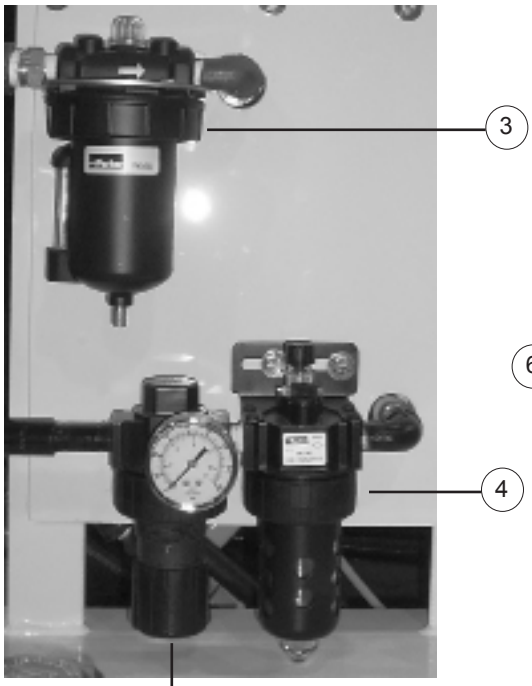
ITEM	PART #	DESCRIPTION	QTY
1	U4002-0027	VALVE DIAPHRAGM,2-WAY,5-125 PSI AIR	12
2	16-0295	VALVE,SOLENOID,MAC 12VDC	12

PNEUMATIC SYSTEM



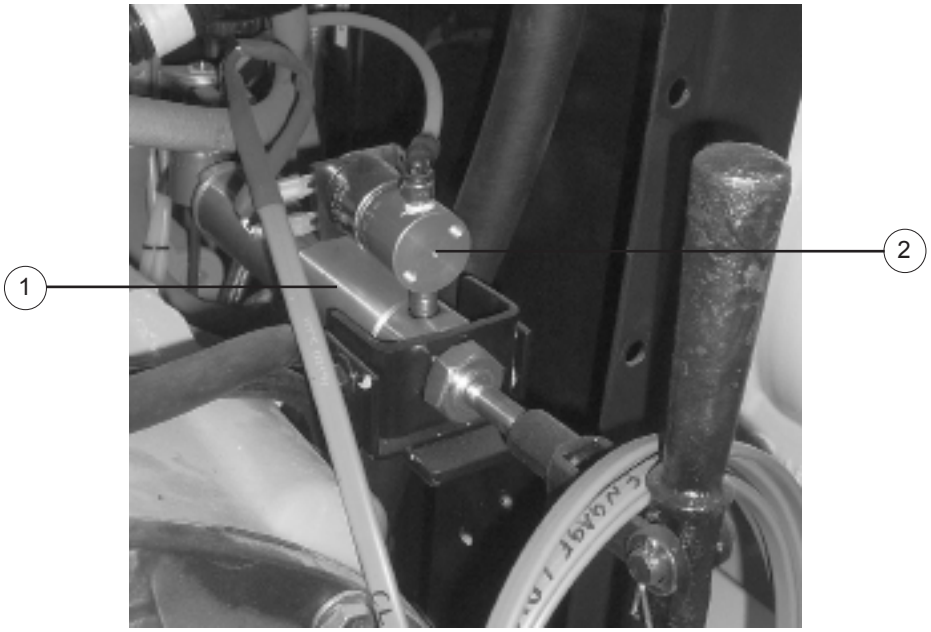
ITEM	PART #	DESCRIPTION	QTY
1	U4003-0092	VALVE,SOLENOID,(3)4-WAY STACKING,12VDC	1
2	U4002-0175	CYLINDER,AIR,2.5”B X 3” STROKE	4

PNEUMATIC SYSTEM



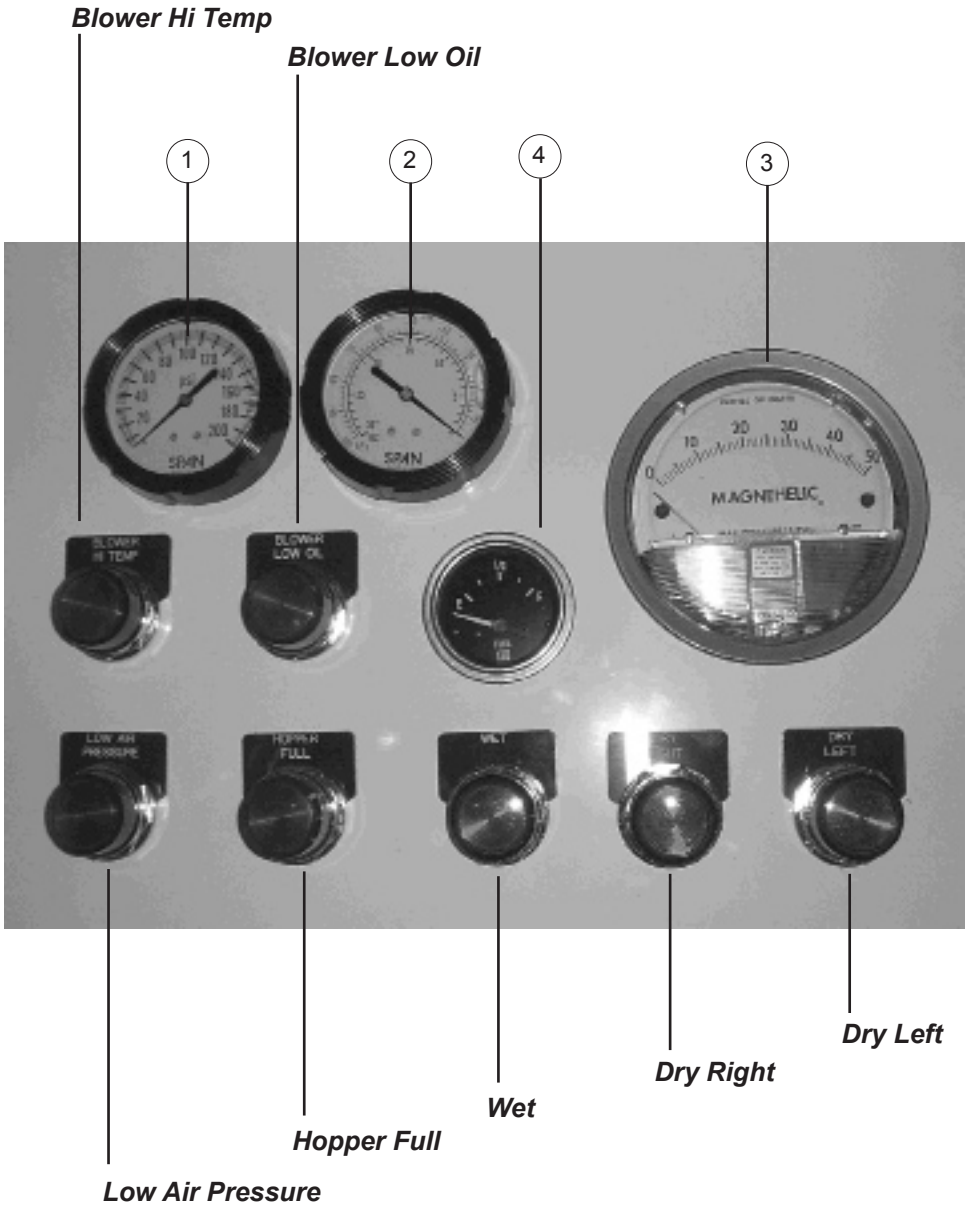
ITEM	PART #	DESCRIPTION	QTY
1	U1003-0022	TANK,AIR,SADDLE MOUNT,9.5”DIA	1
2	U4003-0123	MOISTURE EJECTOR,AUTOMATIC	1
3	U6100-0119	LUBRICATOR,AIR,PARKER 06L21B, 3/8 PORTS	1
4	U4007-0050	FILTER,COALESCING,3/8 NPT 20CFM @100PSI	1
5	15-0454	REGULATOR,AIR,125 PSIG,3/8NPT,W/GAUGE	1
6	U4003-0048	VALVE,PNUEMATIC SOLENOID,1/8”NPT,12VDC	2
6	15-0453	VALVE,SOLENOID,12VDC	1

PNEUMATIC SYSTEM



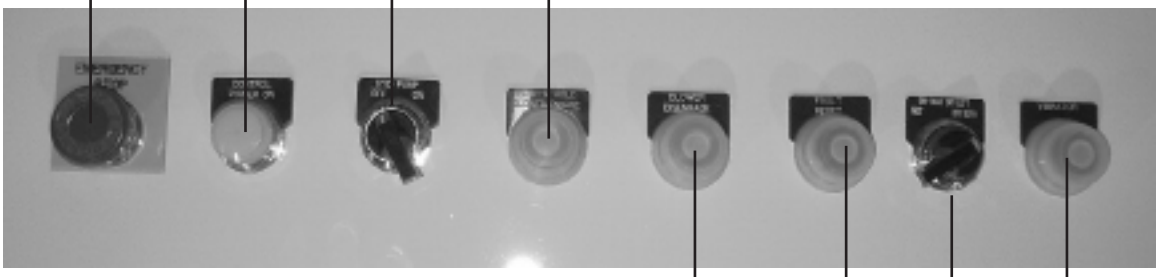
ITEM	PART #	DESCRIPTION	QTY
1	U0101-0485	CYLINDER,AIR,S.S.ROD,1.5BORE X 5”STROKE	1
2	15-0453	VALVE,SOLENOID,12VDC	2
3	U5020-0533	VIBRATOR,PNEUMATIC,2” PISTON,YELLOW JACKET	1

CONTROL PANEL
PART #U4102-0621

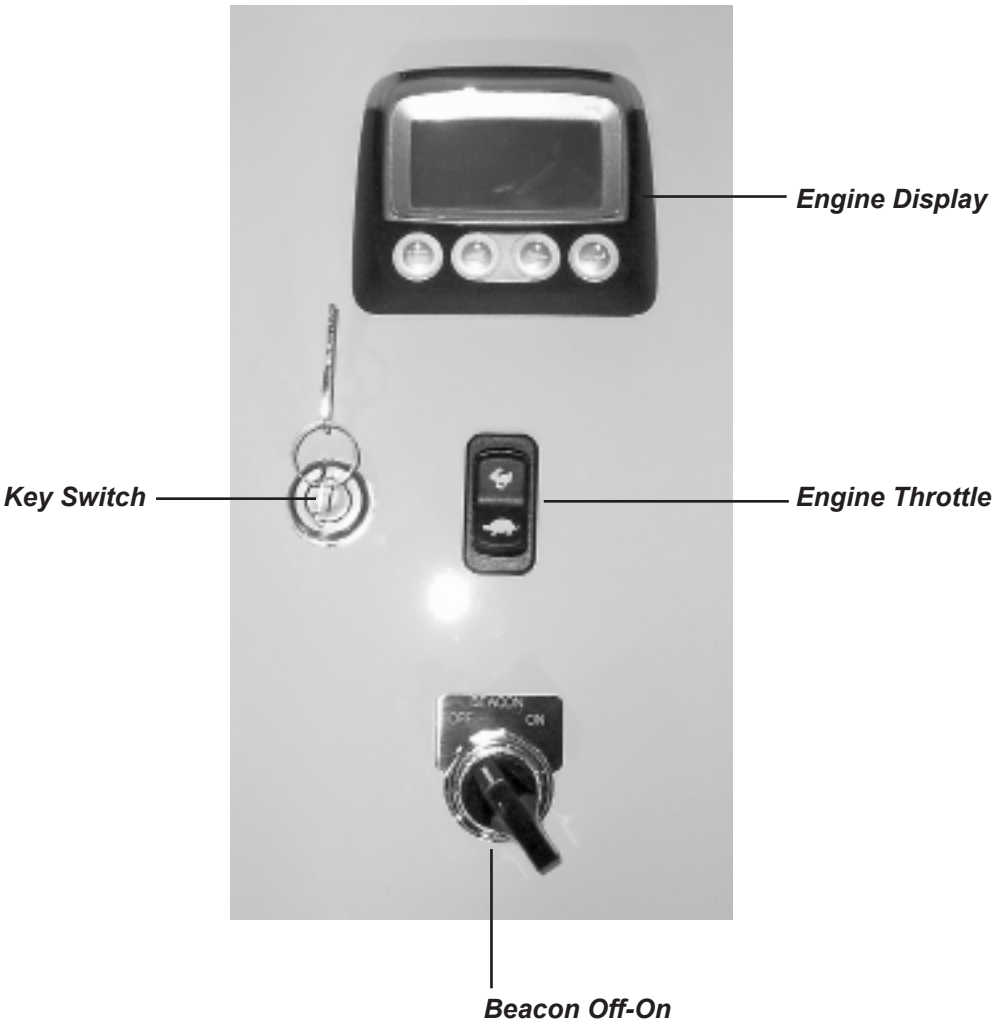


ITEM	PART #	DESCRIPTION	QTY
1	U4008-0004	GAUGE,AIR PRESSURE,0-200 PSI	1
2	U4008-0001	GAUGE,VACUUM,0-30”HG,PANEL MOUNT	1
3	U4008-0002	GAUGE,DIFFERENTIAL PRESSURE,0-50” WC	1
4	U8000-0073	GAUGE,FUEL,LEVEL STEWART WARNER	1

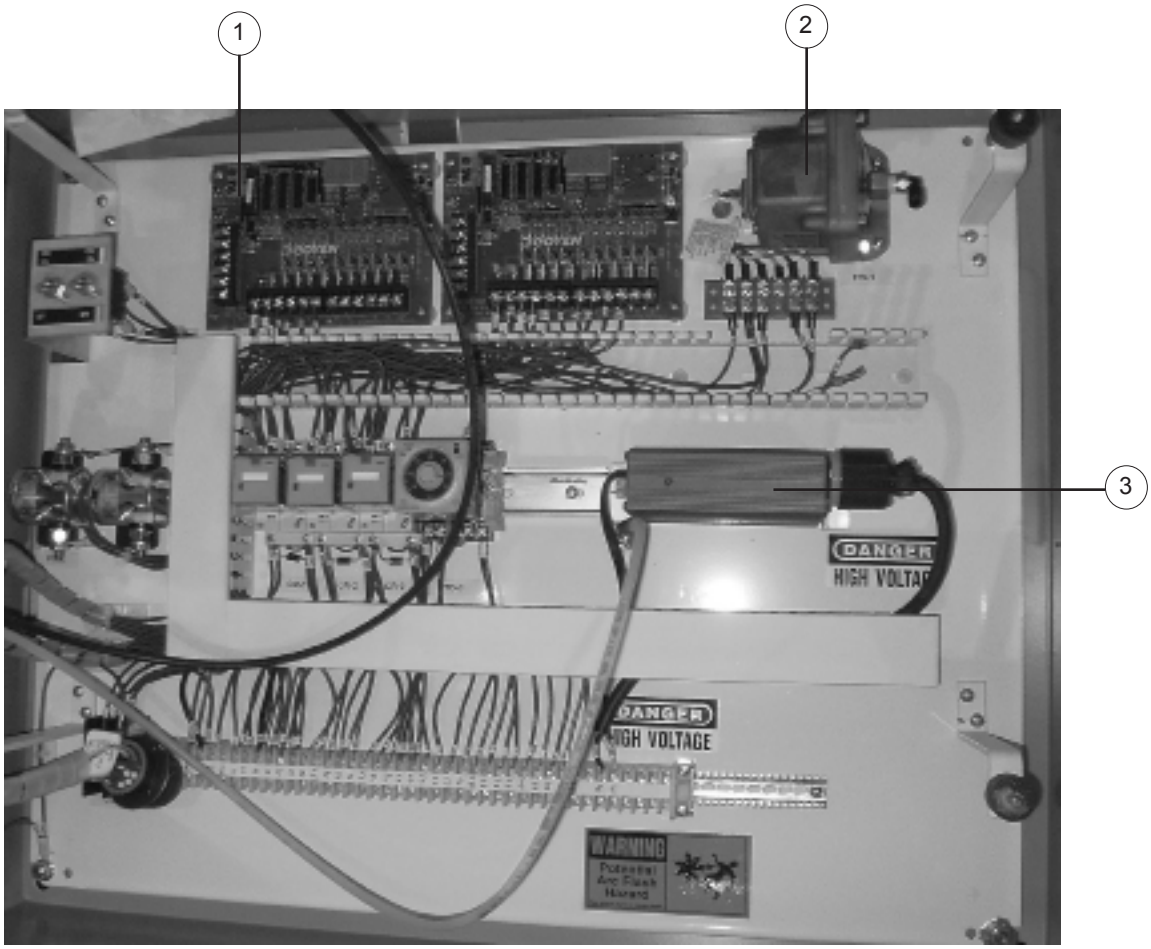
CONTROL PANEL
PART #U4102-0621



CONTROL PANEL
PART #U4102-0621



CONTROL PANEL
PART #U4102-0621



ITEM	PART #	DESCRIPTION	QTY
1	U4109-0019-DI	TIMER BOARD,8 OUTPUT,DIGITAL,12VDC	2
2	U4003-0105	SWITCH,PRESSURE,0-200 PSI, SINGLE SET	1
3	N/A	150W POWER INVERTER (TRIPP-LITE PV150)	1

CABLE,STATIC GROUNDING,50'ON REEL
PART #U8000-0177

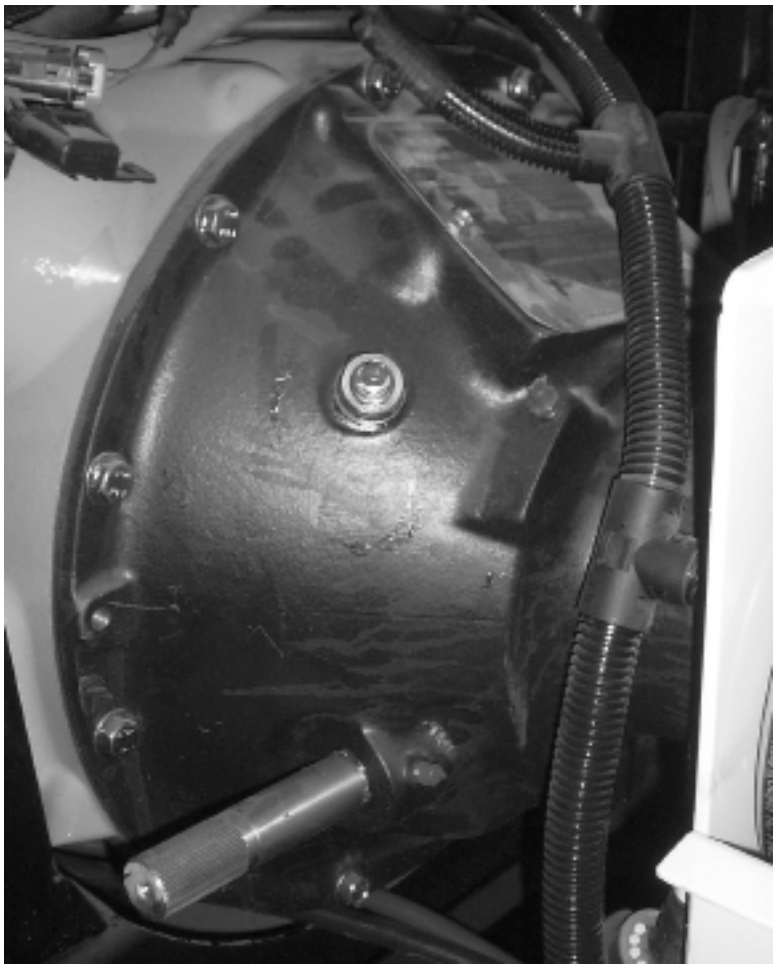
SPARE PARTS LIST

ITEM	PART #	DESCRIPTION	QTY
1	U3807-0050	GASKET,DOOR,SIDE ACCESS,BAGHOUSE,FLUSH	1
2	U3802-0015	GASKET,WET PLENUM DOOR,SE-475	2
3	U3802-0032	GASKET,DRY PLENUM,SE-475	2
4	U3801-0019	SEAL,TAILGATE,T475,95 3/4 WIDE BOX	1
5	U3809-0090	GASKET,ACCESS DOOR,NOSE,8x12	2
6	U3809-0091	GASKET,ACCESS DOOR,NOSE,12x15 5/8	1
7	U3809-0092	GASKET,ACCESS DOOR,NOSE,26 3/4x28	1
8	U3807-0014	GASKET,WET/DRY CHANGE OVER	1
9	U3807-0023	GASKET,10” STANDPIPE, FOR 9 CU. YD. BOX	1
10	U3701-0052	FILTER BAG,WET,4 CU YD BOX	8
11	U3701-0053	FILTER BAG,DRY,6”OD X 44” LONG	32
12	U3702-0024	CAGE,BAG,ALL 2 3/4”VENTURI W/4” RING SPA	10
13	20-0069	FILTER TUBE,PRESSURE DIFFERENTIAL	1
14	U3914-0017	FILTER,HYDRAULIC,CARTRIDGE	1
15	16-0295	VALVE,SOLENOID,MAC 12VDC	4
16	U4002-0027	VALVE DIAPHRAGM,2-WAY,5-125 PSI AIR	4
17	U4109-0019-DI	TIMER BOARD,8 OUTPUT,DIGITAL,12VDC	1
18	U4008-0001	GAUGE,VACUUM,0-30”HG,PANEL MOUNT	1
19	U4008-0002	GAUGE,DIFFERENTIAL PRESSURE,0-50” WC	1
20	U4008-0004	GAUGE,AIR PRESSURE,0-200 PSI	1
21	U4003-0105	SWITCH,PRESSURE,0-200 PSI, SINGLE SET	1
22	07-0117	BELT,5R5VX900	1

MAINTENANCE

Hi-Vac®

TWIN DISC POWER TAKE-OFF
MODEL: SP111P301



Note: **For lubrication intervals, recommended lubricants, and clutch adjustment, follow the recommendations of the PTO manufacturer. This manual is located in the "Manufacturer's Manuals" section of this operations manual.**

FILTER BAG REMOVAL

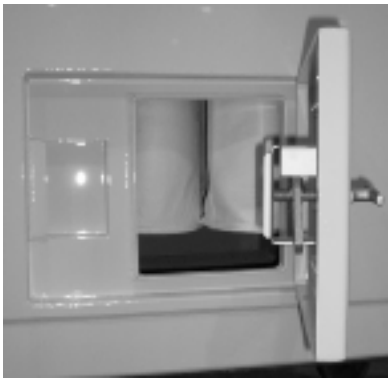
1. With **Ultra-Vac®** unit shut off and parking brake on, carefully climb on top of the collector body. Open all plenum doors to gain access to filters and cages.

2. Remove cages by carefully pulling up and out of the filter bag. Be sure not to catch the bag on the cages. The dry plenum will have 32 bags and cages and the wet side will have 8 bags and cages.

3. On top of the filter bags, there is a snapband sewn into the filter bag. Simply fold snapbands in half and push bags through the tubesheet.

NOTE: **Do not pull filter bags up and out. This will bring dirty material up into the clean-side of the vacuum system which can cause serious damage to the blower. By pushing them through the tubesheet you can keep all dirt in the baghouse.**

4. The bags can then be removed through the baghouse access doors or the tailgate.



FILTER BAG INSTALLATION

1. Be sure the baghouse, tubesheets and plenum area is clean of debris.

2. Slide clean bags from top of unit, down into the tubesheet holes.

3. When bag reaches the snapband, fold the snapband in half and push down until the tubesheet fits into the groove in the snapband.

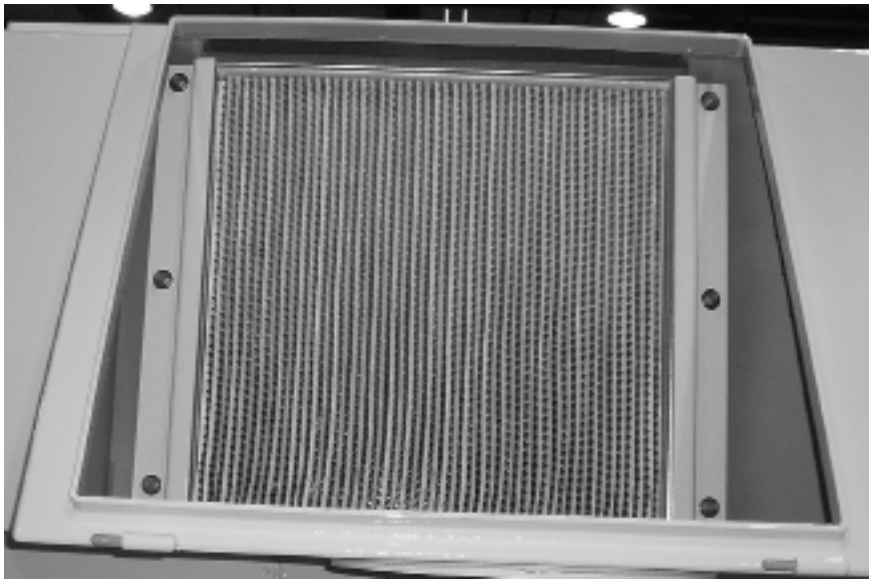
4. Unfold the snapband until it snaps back to round.

NOTE: **Tubesheet must fit tight in the snap band groove, or bags will not seal properly causing serious damage to Vacuum Pump.**

5. Inspect cages to be sure they are straight, no broken wires, and free of burrs and sharp edges that could tear the bags when installed.

6. Slide the cages down from the top. Be sure to slide straight down to keep from damaging the bags. The cages should slide tight against the tubesheet completely covering the bag.

HEPA FILTER



Description:

The HEPA filter option is designed to eliminate virtually any particulate from being discharged from the **Ultra-Vac®** unit. The HEPA filter is located on the suction side of the vacuum pump between the clean side of the filter system and the inlet side of the vacuum pump. In this design, all of the air is filtered before it enters the vacuum pump, assuring the air being discharged is clean. Typical filter efficiency for a HEPA filter is 99.7% of all material down to 0.3 micron in size.

Maintenance:

Each **Ultra-Vac®** unit that is equipped with a HEPA filter also includes a filter differential gauge to show the condition of the HEPA filter. With a new HEPA filter in place, start the **Ultra-Vac®** unit with no hose connected and note the differential reading for the HEPA filter. Typically, this will be between 1" H_2O and 5" H_2O. Monitor the HEPA differential reading daily. When the differential reading increases by 5" H_2O or more from the orginal new filter reading, the filter should be replaced.

TENSIONING V-BELT DRIVES

Without exception, the most important factor in the successful operation of a V-belt drive is proper belt tensioning. To achieve the long, trouble-free service associated with V-belt drives, belt tension must be sufficient to overcome slipping under maximum peak load. This could be either at start or during the work cycle. The amount of peak load will vary depending upon the character of the driven machine or drive system. To increase total tension, merely increase the center distance. Before attempting to tension any drive, it is imperative that the sheaves be properly installed and aligned. If a V-belt slips, it is too loose. Add to the tension by increasing the center distance. Never apply belt dressing as this will damage the belt and cause early failure.

A. Step 1

Reduce the center distance so that the belts may be placed over the sheaves and in the grooves without forcing them over the sides of the grooves. Arrange the belts so that the top and bottom spans have about the same sag. Apply tension to the belts by increasing the center distance until the belts are snug.

B. Step 2

Operate the drive a few minutes to seat the belts in the sheave grooves. Observe the operation of the drive under its highest load condition (usually starting). A slight bow of the slack side of the drive indicates proper tension. If the slack side remains taut during the peak load, the drive is too tight. Excessive bowing or slippage indicates insufficient tension. If the belts squeal as the motor comes on or at some subsequent peak load, they are not tight enough to deliver the torque demanded by the drive machine. The drive should be stopped and the belts tightened.

C. Step 3

Check the tension on a new drive frequently during the first day by observing the slack side span. After a few days of operation, the belts will seat themselves in the sheave grooves and it may become necessary to readjust so that the drive again shows a slight bow in the back side.

ADJUSTING THE SENSITIVITY OF THE LEVEL PROBE

Every standard **Ultra-Vac®** comes with a Drexelbrook Level Probe. This probe is used for wet or dry applications. The sensitivity of the probe may need to be adjusted according to the material that is filling the hopper or if the probe is replaced.

The Drexelbrook Level Probe used on the **Ultra-Vac®** units has a level detection range from approximately 6 inches from the probe tip to a level that applies pressure on the probe tip.

The level probe sensitivity may need to be adjusted to get the desired level of your particular material in the hopper .

To adjust the sensitivity, refer to the manufacturer's manual located in the "Manufacturer's Manuals" section of this operations manual.

LUBRICATION INTERVALS

1. **Positive Displacement Vacuum Pump (Blower)**
   Follow the recommendations of the Blower manufacturer's manual located in the "Manufacturer's Manuals" section of this operations manual.
2. **Hydraulic System**
   Drain oil reservoir and replace with new oil every 1000 hours of operation.
   Grease fittings on tailgate locks and pivot pins.

3. **Engine**
   Follow the recommendations of the engine manufacturer's manual.

   Note: Record maintenance performed on Lubrication Maintenance Record Form.

4. **Vibrator Lubricator**
   Check oil level and add if necessary. Follow the recommendations of the Lubricator manufacturer's manual located in the "Manufacturer's Manuals" section of this operations manual.

RECOMMENDED LUBRICANTS

1. Positive Displacement Vacuum Pump (Blowers)

Follow the recommendations of the Blower manufacturers manual located in the "Manufacturer's Manuals" section of this operations manual.

2. Hydraulic System

a) All hydraulic systems furnished for use on **Ultra-Vac®** units will be supplied with S1 M 46 Hydraulic fluid.

b) Tailgate locks and Pivot pins shall use a High Grade, Lithium base, No. 2 Bearing grease.

3. Diesel Engine

Follow the recommendations of the Engine manufacturers manual.

3. Electric Motor

Follow the recommendations of the Motor manufacturers manual located in the "Manufacturer's Manuals" section of this operations manual.

4. Lubricator

Follow the recommendations of the Lubricator manufacturers manual located in the "Manufacturer's Manuals" section of this operations manual.

LUBRICATION MAINTENANCE RECORD

OWNER_____

PLANT LOCATION_____ **BUILDING**_____

Ultra-Vac® SERIAL # UV-_____ **MODEL** _____

MAINTENANCE PERFORMED BY _____ **DATE:**_____

RECORD Hi-Vac® HOUR METER _____ **HOURS**

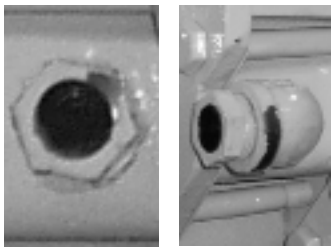
LUBRICATION PERFORMED	OIL DRAINED & CHANGED	OIL ADDED	GREASED
VACUUM PUMP			N/A
HYDRAULIC SYSTEM			N/A
DIESEL ENGINE			N/A
ELECTRIC MOTOR	N/A	N/A	
LUBRICATOR			N/A

DAILY CHECKS (before starting engine)

Perform the daily maintenance checks listed below and record on Record Sheet 1.

1. Vacuum Pump Oil Level

Checking the vacuum pump oil level is critical and should be done frequently. Some vacuum pumps have oil level sight gauges,and others have oil level plugs. If oil is needed, refer to the vacuum pump manual located in the "Manufacturer's Manuals" section of this operations manual. Record on Daily Maintenance Schedule Record.



Oil Sites

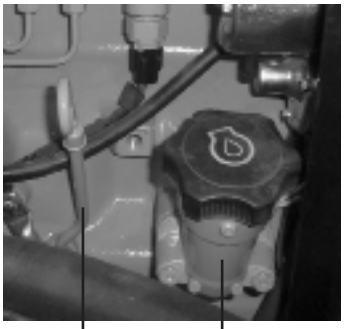
Note: Unit must be on level surface to get an accurate oil level reading.

2. Engine Oil & Coolant Levels

a) Remove Engine side cover to access the dipstick and oil fill spout. Check engine oil when engine is cool to get a more accurate reading. If oil is needed, refer to the engine manual. Record on Daily Maintenance Schedule Record.

b) When engine is cool, remove Radiator Cap and check Coolant level. If coolant is needed, refer to the engine manual. Record on Daily Maintenance Schedule Record.

CAUTION: NEVER REMOVE RADIATOR CAP WHEN ENGINE IS WARM.



Oil Fill

Dipstick

3. Lubricator

Check oil level in Lubricator. If oil is needed, refer to the lubricator manual located in the "Manufacturer's Manuals" section of this operations manual. and record on Daily Maintenance Schedule Record.

Lubricator

DAILY CHECKS (before starting engine)

Perform the daily maintenance checks listed below and record on Record Sheet 1.

Air Regulator

Hydrualic Tank

4. Compressed Air Regulator Filter Bowl

Drain water from compressed air filter by unscrewing the valve below the filter bowl. Record on Daily Maintenance Schedule Record.

5. Hydraulic Oil

Check oil level from site glass on the side of the Hydraulic tank. If oil is needed, add the required amount of S1 M 46 Hydraulic fluid. Record on Daily Maintenance Schedule Record.

DAILY CHECKS (engine running, clutch engaged)

Perform the daily maintenance checks listed below and record on Record Sheet 1.

6. Compressed Air Pressure Switch

a) When the engine is started, watch the “Air Pressure Gauge” and the “Low Air Pressure” light. The light will stay lit until the gauge reaches 60 PSI. Record the air pressure at which the “Low Air Pressure” light goes out, on the Daily Maintenance Schedule Record.

7. Air Purge System

a) When the engine is started, listen for the solenoids inside the plenum doors to exhaust air. Watch the “Air Pressure Gauge” for a drop of about 10 PSI. This should happen every 15 seconds for 8 times. Record on the Daily Maintenance Schedule Record.

8. Compressed Air & Hydraulic Lines

a) When the engine is started, inspect all air and hydraulic lines, fittings, and connections for leaks. Look on the ground under unit for drops or pools of oil and record on the Daily Maintenance Schedule Record.

DAILY CHECKS (engine running, clutch engaged)

Perform the daily maintenance checks listed below and record on Record Sheet 1.

9. Filter Bag Pressure Differential

a) With the inlet to your machine open, Check differential gauge. Reading should be between 1" and 7" of water (H_2O). Record the reading on the pressure differential gauge in inches H_2O (water).

1. If higher than 10 inches of water, a visual inspection should be made for excessive buildup of material on the filter bag surfaces or bridging of material between bags. This can be done through the side access door.

Differential

10. No Load Vacuum

a) With the inlet completely open and no hoses connected,check vacuum gauge reading. This "no load" reading is an important indicator of the condition of the unit. The "no load" vacuum should be about 1 inch of mercury (Hg). Record vacuum reading in (Hg).

1. If "no load" vacuum reading is zero (0),
   a. Inspect vacuum gauge plumbing for hose rupture, loose fittings, or plugged lines.
   b. Check that the box is properly seated on the standpipe and that there are no leaks.

2. If "no load" vacuum reading is higher,
   a. Check for obstruction in the cyclones and pipings by opening the top lids on each cyclone.

Vacuum

11. Dust Discharge

a) Inspect the silencer for visible dust in the air stream.

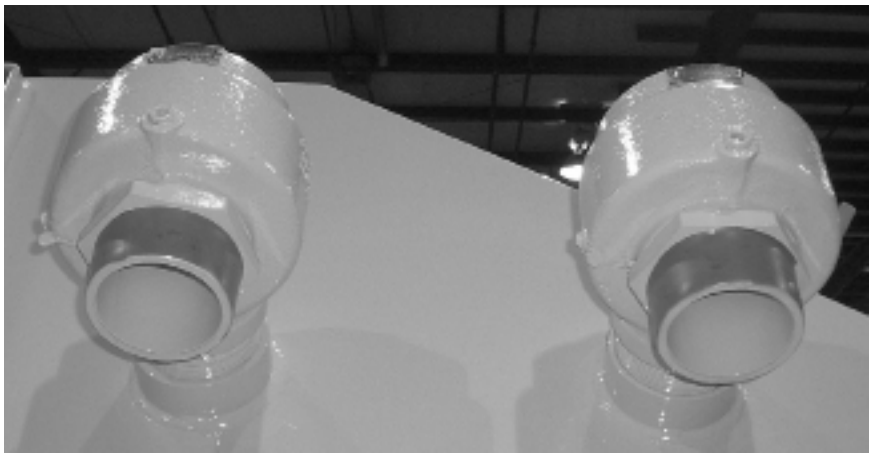
NOTE: Shut the unit off immediately if dust is present. Any dust discharge should be corrected immediately to protect the vacuum pump.

b) If dust is present, disengage the vacuum pump and shut down the engine. Check filter bags for rupture or leaks by opening the top access doors and looking for any signs of dust on top of the filter bags or under the inside of the top access door.

Discharge

DAILY CHECKS (engine running, clutch engaged)

Perform the daily maintenance checks listed below and record on Record Sheet 1.



12. Mechanical Vacuum Relief Valves (with machine running)

a) Check vacuum relief valves for proper operation. With the machine running in a “no load” condition, slowly block off hose inlet until 14” of mercury (at sea level) is indicated on the vacuum gauge. Relief valve should remain closed. Continue to block off powerhead inlet while watching vacuum gauge. Relief valve should open at 15” of mercury (at sea level) +/- 1/2 inch. Record where valve opens in inches of Hg.

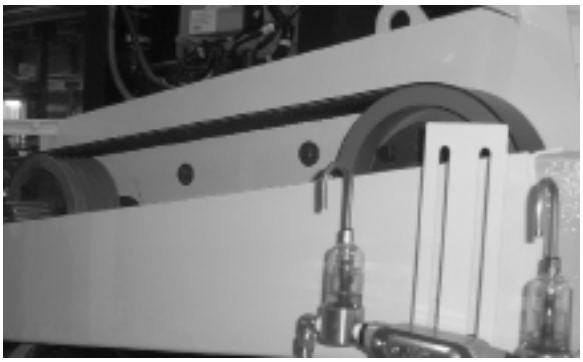
WARNING: Do not check relief valve with hand!

Note: You will hear the in rush of air when the valve opens.

Note: Under no circumstances should the Ultra-Vac® be used with a valve that opens higher than 15” of mercury.

WEEKLY CHECKS (or Every 40 Hours of Operation)
(before starting engine)

Perform the weekly maintenance checks listed below and record on Record Sheet 2.



1. Belt Tension

Disconnect battery cables and remove belt guard and check tension per “Tensioning V-belt Drives” in the maintenance section. Record on Weekly Maintenance Schedule Record.

2. Subframe U-Bolts

Check U-Bolts holding the vacuum unit to the truck chassis and record on Weekly Maintenance Schedule Record.

3. Electric Cable

Visually inspect all electrical conduit, cables, and connections for signs of abrasions or breaks.

WEEKLY CHECKS (or Every 40 Hours of Operation)
(engine running, clutch disengaged)

Perform the weekly maintenance checks listed below and record on Record Sheet 2.

Drexelbrook Level Probe

4. Level Probe

Check level probe for operation by touching the probe. Control panel must be on with the blower "OFF". The "Hopper Full" light will turn "ON" on control panel. If adjustment is necessary, refer to the "Adjusting the Sensitivity Of the Level Probe" section located in this manual or to the Drexelbrook probe manual located in the "Manufacturer's Manuals" section of this operations manual.. Record on the Weekly Maintenance Schedule Record.

5. Compressed Air lines and Vacuum Leaks

Inspect all compressed air lines, fittings, and connections for possible leaks. Check the openings for possible damage to gaskets. With machine running, listen for audible leaks around doors, hose connections, flanges, etc., and repair as required. Record on Weekly Maintenance Schedule Record.

MONTHLY CHECKS (before starting engine)

Perform the monthly maintenance checks listed below and record on Record Sheet 3.

1. Vacuum Pump Lobe Wear

Check the vacuum pump standpipe screen for visible dust by raising the collector body. If dust is present remove the vacuum pump standpipe and remove the bolts around the standpipe, located on top of blower. Look for visible signs of wear on the tips of the vacuum pump lobes.

WARNING: Be sure to put safety prop in place before removing the standpipe.

2. Centrifugal Separator (Deflector Box)

Open tailgate and inspect centrifugal separator ring on ceiling of box inside your **Ultra-Vac®** Unit. Repair or replace before it is worn through.

"DAILY" MAINTENANCE RECORD FORM #1

OWNER _____

PLANT LOCATION _____ **BUILDING** _____

Ultra-Vac® SERIAL # UV- _____ **MODEL** _____

MAINTENANCE PERFORMED BY _____ **DATE:** _____

RECORD Hi-Vac® HOUR METER _____ **HOURS**

No.	Action	Gauge Reading	Checked OK	Needs Repair	Repairs Made
1	Check Vacuum Pump Oil Level	N/A			
2	Check Engine Oil & Coolant Levels	N/A			
3	Check Lubricator Oil Level	N/A			
4	Drain Regulator Filter Bowl	N/A			
5	Check Hydraulic Tank Oil Level	N/A			
6	Check Compressed Air Pressure Switch	N/A			
7	Check Air Purge System				
8	Check Compressed Air & Hydraulic Lines	N/A			
9	Check Filter Bag Pressure Differential				
10	Check No Load Vacuum				
11	Check Dust Discharge	N/A			
12	Check Mechanical Vacuum Relief Valves				

"WEEKLY" MAINTENANCE RECORD FORM #2

OWNER_____

PLANT LOCATION_____ **BUILDING**_____

Ultra-Vac® SERIAL # UV-_____ **MODEL** _____

MAINTENANCE PERFORMED BY_____ **DATE:**_____

RECORD Hi-Vac® HOUR METER_____ **HOURS**

No.	Action	Gauge Reading	Checked OK	Needs Repair	Repairs Made
1	Check Belt Tension	N/A			
2	Check Subframe U-Bolts	N/A			
3	Check Electric Cables	N/A			
4	Check Level Probe	N/A			
5	Check Compressed Air and Vacuum Lines	N/A			

"MONTHLY" MAINTENANCE RECORD FORM #3

OWNER_____

PLANT LOCATION_____ **BUILDING**_____

Ultra-Vac® SERIAL # UV-_____ **MODEL** _____

MAINTENANCE PERFORMED BY _____ **DATE:**_____

RECORD Hi-Vac® HOUR METER _____ **HOURS**

No.	Action	Gauge Reading	Checked OK	Needs Repair	Repairs Made
1	Check Vacuum Pump Lobe Wear	N/A			
2	Check Centrifugal Separator	N/A			

OPTIONS

OPTION 170
SHUTDOWN,LOW BLOWER OIL

OPTION 220
HIGH BLOWER TEMPERATURE SHUTDOWN

OPTION 240
GROUND CABLE OPTION,50'REEL

OPTION 440
STARTER,1/4HP MOTOR

ELECTRICAL

ACCESSORIES

MANUFACTURER'S MANUALS